



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/549,549

06/08/2006

Velu Ganesan

F2040(C)

3834

201 7590 06/23/2010  
UNILEVER PATENT GROUP  
800 SYLVAN AVENUE  
AG West S. Wing  
ENGLEWOOD CLIFFS, NJ 07632-3100

EXAMINER

BADR, HAMID R

ART UNIT

PAPER NUMBER

1781

NOTIFICATION DATE

DELIVERY MODE

06/23/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentgroupus@unilever.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/549,549	<b>Applicant(s)</b> GANESAN ET AL.	
	<b>Examiner</b> HAMID R. BADR	<b>Art Unit</b> 1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on RCE 2/23/2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/23/2010 has been entered.

1. Claims 1 and 3-17 are being considered on the merits.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 and 3-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis et al. (GB 2 074 004; hereinafter R1) in view of Ganesan et al. (US 2001/0033880; hereinafter R2).
3. R1 discloses a process for production of black leaf tea where the tea leaves are treated with an acid (0.02 to 0.7 parts by weight of acid to every part by weight of green tea) to lower the pH. R1 teaches of mixing green tea with an acid to lower the pH so that the fermentation is carried at pH 4.3-5.0 range. (page 1, col. 1, lines 40-44)

Art Unit: 1781

4. R1 discloses that the process is suitable for fermentation of the withered and macerated material known as “dhool”, and readily results in a finished black tea (page 1, col. 1, lines 45-49).

5. R1 discloses that the nature of the acid used to effect the pH modification is not unduly critical. The acid can be inorganic e.g. sulphuric acid or orthophosphoric acid or an organic acid e.g. acetic acid. The acid can be employed **alone** or as a buffer solution e.g. Walpole's acetate buffer or McIlvaine's citric acid-phosphate buffer. (page 1, col. 1, lines 58-64). Given that the acid can be employed alone or as a buffer, and noting that McIlvaine's citric acid-phosphate buffer has citric acid as one of the components, it would be obvious to use citric acid on its own as disclosed by R1. R1 also teaches that the acid can be organic as well as inorganic. Citric acid is a safe, highly popular and intensely used food acid. Therefore, choosing citric acid to lower the pH of a food commodity would have been well within the skill of the art.

6. R1 discloses the objective of the invention to be maximizing theaflavins (TF) at the expense of Thearubigins (TR). (page 1, col. 2, lines 103-105)

7. R1 discloses the use of McIlvaine's citric acid-phosphate buffer for lowering the pH of tea leaves during the period of tissue disruption. Details are given in Example 1.

8. Example 4 also gives the details of a commercial process on a small scale where withering of plucked tea leaf, maceration of the tea leaves, fermentation of the tea leaves and finally drying of the resulting tea is practiced where in the macerated material is sprayed with an acid solution prior to fermentation. (page 2, col. 1, Example 4)

Art Unit: 1781

9. Therefore it is clear that the pH lowering agent is being applied before the fermentation as presently claimed.

10. while all the details of the production of black leaf tea is given wherein the macerated leaves are treated with an acid solution, R1 is silent regarding the use of ascorbic acid in the production of black leaf tea.

11. R2 discloses a process for manufacturing black leaf tea that is infusible in hot or cold water. (Abstract).

12. R2 discloses that tea manufacture, especially black tea manufacture traditionally comprises; withering, macerating, fermenting and firing. [0017].

13. R2 discloses the process to comprise withering the plucked tea leaves (optional, but preferred), maceration in which the withered leaves are rolled to bruise and crush the leaves, fermentation during which catechins are converted to colored substances and finally firing in which the fermented product is fired and dried to give a black leaf tea. [0018-0020].

14. R2 discloses a modification of the traditional process by treating the tea leaves with a solubilizing compound including ascorbic acid or its salts in order to enhance the solubility of the black tea in cold water. [0022].

15. R2 teaches that the tea leaves are treated with the solubilizing compound post plucking. The compounds are in the form of a solution at a concentration of from 0.5-10% by weight of tea. The solubilizing compound can be applied singly or in split doses [0024-0025].

Art Unit: 1781

16. R2 discloses that the tea is fermented for 10 minutes to 3 hours at 10 to 60C [0026].

17. R2 discloses that the product obtained by the above process can be used to produce instant tea or for infusing black tea in water at temperatures in the range of 5-100C [0030]. Given that the tea will be an instant tea, it is clear that it can be infused by microwaving as presently claimed.

18. R2 teaches that ascorbic acid can be added before maceration, during maceration and post maceration. [0033]. Given that the fermentation starts with the onset of maceration, the addition of ascorbic acid during maceration or post maceration can be considered during the fermentation stage.

19. R2 discloses a process in which the ascorbic acid solution is added after 30 minutes of fermentation and the fermentation is allowed to continue for another 30 minutes [Example 1, preparation of Sample 3].

20. Given that R2 discloses the addition of ascorbic acid solution 30 minutes after the onset of fermentation, it is clear that the tea leaves are treated after the fermentation.

21. R1 discloses the acidification process, using organic or inorganic acids, wherein the pH lowering agent (acid) is added to the macerated leaves before the fermentation as presently claimed. R2 teaches of using ascorbic acid after the onset of fermentation, therefore it is clearly applied to the tea leaves after the treatment with the pH lowering agent, as disclosed by R1. Consequently the amendment to claim 1 would have been obvious to an artisan.

Art Unit: 1781

22. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use acidifying compounds such as citric acid to increase the concentration of theaflavins (TF) which in turn increase the briskness and brightness of tea liquor as taught by R1, before the fermentation of tea leaves, and use ascorbic acid, after the fermentation of tea leaves, in the process of making black tea to make a black tea product which is cold water infusible as disclosed by R2. One would do that to improve the organoleptic properties as well as practicality of making a tea infusion in a wide range of temperatures. Absent any evidence to contrary and based on the combined teachings of the cited references, there would be a reasonable expectation of success in making a dried black leaf tea with the mentioned properties.

### ***Response to Arguments***

Applicants' arguments have been reviewed. These arguments are not persuasive.

1. Applicants argue that surprising benefit (a redder tea) is obtained by treating the leaves with pH lowering agent and using ascorbic acid after the acid treatment.

a. R1 clearly discloses the pH lowering treatment before the fermentation of leaves. R2 teaches of treating the tea leaves 30 minutes after the onset of fermentation which is continued for another 30 minutes. Therefore it is clear that the combined teachings of R1 and R2 would make the amendment to claim 1 obvious to an artisan.

Please see paragraphs 8 and 9 under the teachings of R1 as well as paragraphs 18-20 under the teachings of R2.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAMID R. BADR whose telephone number is (571)270-3455. The examiner can normally be reached on M-F, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hamid R. Badr  
Examiner  
Art Unit 1781

/Keith D. Hendricks/  
Supervisory Patent Examiner, Art Unit 1781